

REMARKS

The office action of March 30, 2004, has been carefully considered.

It is noted that claims 10 and 12-15 are rejected under 35 U.S.C. 103(a) over the patent to Mercer et al. in view of the patent to Salter, Jr. and the patent to Dahlstrom.

It is respectfully submitted that the claims presently on file differ essentially and in an unobvious, highly advantageous manner from the constructions disclosed in the references.

Turning now to the references, and particularly to the patent to Mercer et al., it can be seen that this reference discloses an axial roll adjustment means.

The patent to Salter, Jr. discloses a heavy duty axial adjustment mechanism for rolling mill rolls.

The patent to Dahlstrom discloses alignment maintenance for the rolls of rolling mills.

**HM-361PCT**

The Examiner combined these references in determining that claims 10 and 12-15 would be unpatentable over such a combination.

The Examiner cites Figure 8 of the newly cited patent to Dahlstrom as showing a rolling mill arrangement in which the axial position of working rolls is determined by sensing the actual position of the free end of the roll necks.

Applicant respectfully submits that the combination of references does not teach the presently claimed invention. The presently claimed invention covers a roll stand for hot-rolling or cold-rolling rolled strips of different materials with work rolls, back-up rolls and, optionally, intermediate rolls arranged in pairs, wherein the rolls of at least one pair of rolls are axially displaceable toward both sides and have a contour for compensating rolling defects. The object of the present invention is to simplify the axial displacement of the rolls of a roll stand relative to the approach using displaceable chocks.

The present invention thus deals with axially displaceable rolls. This is not taught by Dahlstrom. Dahlstrom addresses the problem that the axes of the work rolls, which are normally

## HM-361PCT

parallel to each other, over time, change their position and cross (see page 1, column 1, beginning at line 12 of Dahlstrom). In other words, Dahlstrom deals with moving the roll axes in a horizontal plane so that the axes stay parallel above one another. The roll axes are **not** axially moved.

The arrangement shown in Fig. 8 of Dahlstrom adjusts the position of the bearing 28 in or opposite to the running direction of the rolled material, **not** in the axial direction. With this arrangement the roll axes are brought into a position perpendicular to the running direction of the rolled material. This takes place via the gears 30 driven by a motor 31. The gears 30 adjust the screws 29 that are horizontally arranged in the stand 21 and connected to the bearing 28. When the screw 29 is turned the bearing 28 and the roll axis are moved relative to the running direction of the rolling material. As shown in the bottom left in Fig. 8, the roll axis is influenced from the side. An axial displacement cannot be carried out by this arrangement.

Furthermore, Fig. 8 does not show a position indicator as in the presently claimed invention. According to the present invention, a position indicator is provided that is connected with

the free end of the roll neck of the roll. This allows a determination of the axial position of the free end and therewith the roll contour. A turning of the roll axis in a horizontal plane is not carried out by the present invention.

Fig. 8 of Dahlstrom teaches just such an arrangement. As shown, the slide contact 32 is arranged on the right and left sides of the contact positions 33, 34. The roll axle is arranged in a horizontal plane. If the right angle between the running direction of the rolling material and the roll axis changes in an amount that is disruptive to rolling the outer surfaces of the contact 32 move in the contact positions 33, 34. The contact occurs as follows, the contact 32 contacts the right upper position 34 and the left lower position 33, or the left upper position 33 and the right lower position 34. By this contact the electric circuit is closed and the motor 32 is actuated which moves the screw 29 in or out. The screw 29 changes the horizontal position of the roll ends or the bearing 28. There is no axial movement of the roll axis and such a movement is not even possible since the screw 29 is perpendicular to the roll axis.

Thus, the present invention provides a direct measurement or

**HM-361PCT**

determination of the axial position of the roll. None of the references taken either alone or in combination proved any teaching of the invention as discussed above and as recited in independent claim 10.


In view of these considerations it is respectfully submitted that the rejection of claims 10 and 12-15 under 35 U.S.C. 103(a) over a combination of the above-discussed references is overcome and should be withdrawn.

Reconsideration and allowance of the present application are respectfully requested.

HM-361PCT

Any additional fees or charges required at this time in connection with this application may be charged to Patent and Trademark Office Deposit Account No. 11-1835.

Respectfully submitted,

By   
Friedrich Kueffner  
Reg. No. 29,482  
317 Madison Avenue, Suite 910  
New York, New York 10017  
(212) 986-3114

Dated: June 29, 2004

**CERTIFICATE OF MAILING**

I hereby certify that this correspondence is being deposited with the United States Postal Service as first class mail in an envelope addressed to: Commissioner for Patents, PO Box 1450 Alexandria, VA 22313-1450, on June 29, 2004.

By:   
Friedrich Kueffner

Date: June 29, 2004